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SPEECH

Speech delivered by The Vice President of India, Shri M. Hamid Ansari on 10th January, 2016 at Vigyan Bhawan on the occasion of launching of new look of Rajya Sabha TV and inaugurating a Panel Discussion on 'Scientific Temper: A Pre-requisite for Knowledge Based Society'.

> 'I could not have thought of beginning the New Year on a better note than to participate in a conclave like this'.

The theme of our discussion is scientific temper. It is taken for granted, yet inadequately explored. What do the two terms – 'Scientific' and 'Temper' — actually mean? Any dictionary would tell us the meaning of 'temper'; it means a frame of mind or mental disposition. The same dictionary tells us that 'Scientific' means seeking knowledge through systematic observation and experiment. Its opposite is 'Unscientific'; it denotes acquisition of knowledge by methods that are scientific.

Thus, the simple meaning of scientific temper is a frame of mind that trains itself to seek knowledge by scientific methodology and refrains from acquiring it through other means. Its emphasis is on the *process* as well as the *product*.

Scientific Temper means that knowledge based only on authority or legend — of superiors, elders, tradition or convention — is insufficient unless it is supported by a rational process of reasoning based on facts. Scientific Temper, thus, is an attitude which involves the application of logic, discussion, argument and analysis are vital parts of this approach. It cannot be authoritarian and must submit to reasoning based on facts and logic.

It was Jawaharlal Nehru who introduced the term in our public discourse.

The '*mere applications of science and technology will not be a sufficient condition*', he wrote, adding that *w*hat is needed is '*the scientific approach, the adventurous and yet critical temper*

of science, the search for truth and new knowledge, the refusal to accept anything without testing and trial, the capacity to change previous conclusions in the face of new evidence, the reliance on observed fact and not on pre-conceived theory, the hard discipline of the mind — all this is necessary, not merely for the application of science but for life itself and the solution of its many problems'.

Scientific Temper is characterized by traits like a healthy skepticism, universalism, freedom from prejudice or bias, objectivity, open mindedness, humility, willingness to suspend judgment without sufficient evidence, rationality, perseverance and positive approach to failure. A person having scientific attitude uses the method of science in his/her daily normal decision making process.

One of the objectives of our Constitution is to make scientific temper the basis of all social interaction. This is spelt out in Article 51A: '*it shall be the duty of every citizen of India to develop scientific temper, humanism and spirit of inquiry and reform*'.

Why was this done?

The answer is evident. We live in the age of science. Science has become the most powerful driver of growth and development. No aspect of human life remains untouched by science. The answers to humanity's greatest challenges today — disease, hunger, environmental degradation, climate change, energy requirements and search for new technologies to overcome them — rest in our better understanding of science.

This has practical implications:

- In a competitive economy, there will be much greater demands on the Scientific and Technological capabilities of the country. We will need more, and better, innovations in order to remain competitive as we aspire for faster, sustainable and inclusive growth.
- Public acceptance of scientific temper and development of a critical and inquisitive attitude is a precondition for

fostering and sustaining the cultivation of innovations and scientific research.

- We need to create the right ambience and structures to encourage science, research and innovation. A pre-requisite is the need to develop an enquiring attitude and an analytical approach that leads to rational thinking and the pursuit of truth without prejudice.

This should be evident to all. In reality, it is not so. Much too often there is a lack of scientific temper in our daily life. Allow me to cite a few situations:

- In our family life, we do not approve of questioning. Most parents do not like children asking questions. In schools, from nursery to high school, teachers frown upon children raising questions. In colleges and universities, asking questions is often considered 'cheeky' and an attempt by the student to cast doubt on the knowledge of the teacher.
- The same holds good for social life. It is considered 'disrespectful' to question an elder, a superior or a leader.
- This frame of mind is reflected in our attitude to matters of social custom, inherited tradition and faith. Attempts to separate myth from fact, history from mythology, belief from scientifically verified facts, are often frowned upon. Pursuant to it, occult is dubbed scientific and superstition as 'culture'.
- Such approaches have often taken unpleasant and violent turn: books have been banned or withdrawn from circulation, libraries have been burnt, individual dissenters ostracized or killed, social peace disturbed and violence inflicted on citizens.
- In each of these cases, the working assumption is that questioning will hurt sentiments, damage or destroy existing order or structures, undermine faith, disrupt social order.

Based on these dubious foundations, irrational faiths and beliefs based on unscientific prejudices and habits still persist.

There is intolerance of criticism and questioning. It is ironical that the latest Information Technology tools are used for propagation of anti-science beliefs.

It is strange that in an India committed to modernity, we have a large number of faith or tradition-based television channels but none exclusively devoted to science or science-mindedness. It is also paradoxical that at times, even scientists succumb to practices that derogate from scientific temper. These practices raise a question: can one be scientific and un-scientific, rational and irrational, logical and illogical at the same time?

It is here that education has to play a critical role. Unfortunately, our education system is insufficiently equipped to inculcate Scientific Temper in young minds. Over the years, the quantum of scientific information in the country has increased but has not brought about science-mindedness in sufficient measure.

The use of mass media as a means of transmitting science related information is perhaps the most important bulwark in our fight against ignorance and irrationality. The media, given its privileged position, has a responsibility to challenge the rampant obscurantism and superstition that afflict our society.

I am very happy that the Rajya Sabha TV, which has cast itself in the role of a knowledge channel and NISCAIR, which has been in the business of science communication for the past six decades, have taken this initiative. I hope that the books launched today will help in popularizing science and the panel discussion, with the participation of several luminaries, will also contribute to this cause.

I congratulate all those who have been associated with this endeavour and wish them all the very best for the future.

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The Vice President of India